Appendix J

Waste Management

Appendix J

Waste Management

1. INTRODUCTION

This appendix discusses the handling and disposition of waste generated during the Phase 1 remedial activities at Auxiliary Reactor Area (ARA). Seven sites are identified in this Work Plan for remedial activities (ARA-02, ARA-07, ARA-08, ARA-13, ARA-16, ARA-21, and ARA-25). Detailed regulatory and remedial strategies are contained in the Work Plan and in the Record of Decision Department of Energy Idaho Operations Office [DOE-ID].

Waste Generator Services is responsible for the management of all wastes generated during this project. The management control procedures (MCPs) that will be used to effectively manage these wastes are MCP-62, "Low-Level Waste Management;" MCP-63, "Conditional Industrial Waste Management;" MCP-69, "Hazardous Waste Management;" MCP-70, "Mixed Low-Level Waste Management;" MCP-3472, "Identification and Characterization of Environmentally Regulated Waste;" and MCP-3475, "Temporary Storage of CERCLA-Generated Waste at the INEEL." The Toxic Substances Control Act (TSCA) regulations (40 Code of Federal Regulations [CFR] 761.50 through 40 CFR 761.61) will be used to manage polychlorinated biphenyl (PCB) wastes.

Sections J-1.1 through J-1.7 provide general guidance on waste management activities (waste minimization, segregation, packaging, etc.). These sections cite Environmental Protection Agency regulations and MCPs that apply to each specific activity. Section J-1.8 provides site-specific summaries of remedial activities at each task site and the associated waste streams. Section J-1.8 also provides volume estimates, anticipated waste classifications and waste codes, and probable disposition of each waste stream.

1.1 Waste Minimization and Segregation

Waste minimization for this project will be primarily achieved through design and planning to maintain efficient operations. To achieve this goal, waste streams will be segregated primarily by the field activity that is being conducted at the time of generation.

Conditional industrial wastes do not require segregation by type (except for liquids); therefore, containers will be identified as conditional industrial waste and maintained outside work areas for separate collection. Other wastes that may be generated during these activities include low-level waste, Resource Conservation and Recovery Act (RCRA)-hazardous waste, mixed low-level waste, or TSCA-regulated waste. Containers for the collection of these wastes will be clearly labeled to identify the waste type and will be maintained inside the work area until removal for subsequent waste management activities.

1.2 Packaging and Labeling

Containers used to store hazardous waste must meet the requirements of 40 CFR 264, Subpart I. The reusable property, recyclable materials, and waste acceptance criteria (RRWAC) (DOE-ID 1999) details the criteria for waste packaging. The RRWAC also provides guidance to ensure that the containers selected for storage are compatible with final disposition plans. This will alleviate the need for repackaging of the waste prior to shipment to a treatment or disposal facility.

The types of containers anticipated for storage include 208-L (55-gal) open top drums, 1.2 × 2.4 × 7.5 m (4 × 8 × 25 ft) open top roll-off containers, 1.2 × 1.2 × 2.4 m (4 × 4 × 8 ft) Idaho National Engineering and Environmental Laboratory (INEEL) wooden boxes, and high-integrity containers. These containers will be labeled with the standard green and yellow Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) labels. Information on the labels will include the following:

- A unique bar code serial number
- Name of generating facility (i.e., Operable Unit 5-12)
- Phone number of generator contact
- Listed or characteristic waste code(s)
- Waste package gross weight
- Maximum radiation level on contact and at 1 m (3.3 ft) in air
- Waste stream or material identification number as assigned by the receiving facility
- Other labels and markings as required by 40 CFR 172, Subparts D and E.

Any of the above information that is not known when the waste is labeled may be added when the information becomes available. Waste Generator Services (WGS) will provide the unique bar codes and serial numbers. A new bar code will be affixed to each container when waste is first placed in the container. Additionally, waste labels must be visible, legibly printed or stenciled, and placed so that a full set of labels and markings are readily visible.

1.3 Laboratory Samples

All laboratory and sample waste is managed in accordance with the Sample Management Office master task agreements, as part of the contract for each subcontracted laboratory. In general, the laboratory will dispose of any unused sample material. The laboratories are responsible for any waste generated as a result of analyzing the samples. In the event that sample material must be returned from the laboratory, only the unused, unaltered samples in the original sample containers will be accepted from the laboratory. These samples will be returned to the waste stream from which they originated. If the laboratory must return altered sample material (e.g., analytical residues), the laboratory will specifically define the types of chemical additives used in the analytical process and assist in making a hazardous waste determination. This information will be provided to the project field team leader and environmental compliance coordinator. Management of this waste will also require separation from the other unaltered samples being returned.

1.4 Storage and Inspection

Where applicable, waste will be stored in the CERCLA Waste Storage Unit (CWSU) (PBF-ARA-1-CARGO-A) already established at ARA-I. Waste stored in the CWSU will be stored in compliance with the *CERCLA Waste Storage Area Plan for PBF-ARA-1-CARGO-A* (MCP-69). This plan will be modified, as necessary, to accommodate waste proposed for storage in the CWSU. If required due to space limitations, a new CERCLA Storage Area (CSA) will be established.

The CWSU (or CSA) will meet the requirements of 40 CFR 264, Subpart I. These regulations specify that weekly waste container inspections will be conducted at the CWSU (or CSA). The purpose of the inspections is to look for containers that are leaking, evaluate the integrity of the containers, and verify that each container is labeled correctly. Inspections will be documented on the CWSU (or CSA) checklist that is maintained within each CWSU (or CSA). The MCP-3475, "Temporary Storage of CERCLA-Generated Waste at the INEEL," will be used as guidance for the storage and inspection of each CWSU (or CSA).

1.5 Hazardous Waste Determinations

All wastes generated will be characterized as required under RCRA (40 CFR 262.11) and by Department of Energy Orders (435.1 and 5400.5). Based on the RCRA characterization, hazardous waste determinations will be performed and documented that assign the appropriate Environmental Protection Agency waste codes. A hazardous waste determination uses one of two approaches, or a combination of both, to determine if the waste is RCRA hazardous:

1. Process knowledge may be used if there is sufficient existing information to characterize the waste. It may include direct knowledge of the source of the contamination and/or existing validated analytical data.

2. Analysis of representative samples of the waste stream may be performed by either specialized RCRA protocols or standard protocols for sampling and laboratory analysis that are not specialized RCRA methods. Additionally, process knowledge may influence the amount of sampling and analysis required to perform characterization.

The MCP-3472, "Identification and Characterization of Environmentally Regulated Waste," addresses characterization requirements for waste to be transported to a RCRA treatment, storage, and disposal facility. The INEEL-specific requirements for treatment, storage, and disposal of characterized waste are addressed in the RRWAC. Documentation of all hazardous waste determinations made for this project will be maintained in the INEEL Waste Tracking System.

1.6 Waste Disposition

At the conclusion of the investigation, or when deemed necessary, conditional industrial waste will be dispositioned to the Central Facilities Area (CFA) Landfill, following the protocols and completing the forms identified in the RRWAC. To achieve this waste management activity, industrial waste will be turned over to CFA operations personnel for management under existing facility waste streams and in accordance with standing facility procedures. When sufficient quantities of waste have been accumulated to ship to one of the INEEL waste management units or off the INEEL to a commercial waste management facility, WGS will be contacted and the appropriate forms completed and submitted for approval, as required. The waste generator interface will provide assistance in packaging and transporting of the waste.

Waste that is determined to be RCRA hazardous is not intended to be stored in a permitted treatment, storage, and disposal facility. However, if this becomes necessary, it will be labeled as CERCLA to facilitate eventual management in accordance with CERCLA treatment, storage, or disposal that may become available. Should further characterization of the contaminated waste be necessary, services will be requested from environmental monitoring and the Sample Management Office. Requesting those services requires completion of Form 450-01, "Waste Generator Services (WGS) Sample Request Information Log," and Form 435.26, "Sample Management Office Services Request

Form." For final disposition of RCRA-hazardous waste, WGS will be contacted to determine whether the waste qualifies for disposal under terms of the Master Task Agreement F98-180611–Hazardous Waste.

All low-level radioactive and mixed wastes shall be handled and disposed in accordance with MCP-1144, "Preparing and Packaging Waste for Collection," and with the requirements set forth in the RRWAC. Care should be taken to ensure that all containers used to store waste or sampling equipment are in a "like-new" condition.

1.7 Record Keeping and Reporting

Records and reports related to waste management are required to be maintained as identified by MCP-3475, "Temporary Storage of CERCLA-Generated Waste at the INEEL." These records shall include, but not be limited to, the following:

- Hazardous waste determination, characterization information, and statements of process knowledge
- CWSU and CSA inspection reports and log-in/log-out history
- Training records
- Documentation of all spills and/or findings.

1.8 SITE-SPECIFIC WASTE STREAMS

This section provides site-specific summaries of activities at ARA-02, ARA-07, ARA-08, ARA-13, ARA-16, ARA-21, and ARA-25. Estimates on volumes of waste, anticipated waste streams and waste codes, and probable final disposition are also included. Tables J-1 through J-12 provide a summary of the expected waste streams at each site.

1.8.1 ARA-02 Summary of Remedial Activities

ARA-02 is a sanitary waste system comprised of three septic tanks in series, a seepage pit, and associated piping. Although the ARA-02 septic system was designed exclusively for sanitary waste, analytical results have indicated the presence of radionuclides, heavy metals, and organics. Based on these results and process knowledge, the components of the septic system are designated as RCRA F-listed (F001) for 1,1,1-trichloroethane and trichloroethene (DOE-ID 2000). The remediation of the sanitary waste system will include those activities outlined in Section 2.2.2 of the Phase 1 Work Plan.

1.8.2 ARA-02 Waste Streams

Waste generated during the remediation of the ARA-02 Sanitary Waste System includes sludge (bottom cleaning of the seepage pit), concrete and concrete piping (excavation and sizing of system components), pumice blocks (excavation and disposal of the seepage pit), personal protective equipment (PPE), and plastic sheeting. Other potential waste streams include unused/unaltered samples, analytical residues, sample containers, hydraulic spills, contaminated equipment, and miscellaneous waste. The anticipated volumes and waste classifications of these waste streams are summarized in Table J-1.

Table J-1. ARA-02 waste stream summary.

Waste Type	Anticipated Volume	Waste Classification	Waste Code
	Project Site-Specific Waste		
PPE	1.53 m^3 (2 yd^3)	Low-level Mixed	F001
Plastic Sheeting	1.53 m^3 (2 yd^3)	Low-level Mixed	F001
Concrete from tanks and manholes	1.36 m^3 (1.78 yd^3)	Low-level Mixed	F001
Concrete Piping	14.7 m^3 (19.3 yd^3)	Low-level Mixed	F001
Pumice/Concrete Blocks	5.7 m^3 (7.5 yd^3)	Low-level Mixed	F001
Gravel	7.2 m^3 (9.4 yd^3)	Low-level Mixed	F001
Sludge	1.15 m^3 (1.5 yd^3)	Low-level Mixed	F001
Sludge Incineration Residuals	1.15 m^3 (1.5 yd^3)	Low-level Mixed	F001
	Other Potential Waste		
Unused/Unaltered Samples	< 0.03 m^3 (1.0 ft^3)	Low-level Mixed	F001
Analytical Residues	< 0.03 m^3 (1.0 ft^3)	Low-level Mixed	F001, D002
Clean Sample Containers	< 0.03 m^3 (1.0 ft^3)	Conditional Industrial	—
Hydraulic Spills	< 0.77 m^3 (1 yd^3)	Conditional Industrial	—
Contaminated Equipment	No estimate	Low-level Radioactive	—
Miscellaneous	< 0.77 m^3 (1 yd^3)	Conditional Industrial	—

1.8.3 ARA-02 Disposition

Final disposition for these waste streams includes incineration at Waste Experimental Reduction Facility (WERF) (seepage pit sludge, PPE, and plastic sheeting), disposal at Envirocare (concrete, pumice blocks, sludge incineration residue, unused/unaltered samples, and gravel), and disposal at the CFA Landfill (clean sample containers and hydraulic fluids). Table J-2 summarizes the final disposition and packaging for each waste stream.

1.8.4 ARA-07 Summary of Remedial Activities

ARA-07 is a concrete block-lined seepage pit covered by a wooden structure that is sheathed in rolled asphalt roofing. No evidence was found that the seepage pit had received hazardous waste; hence, the seepage pit will be abandoned in place. The abandonment activities are outlined in Section 2.2.4.1 of the Phase 1 Work Plan.

Table J-2. ARA-02 waste stream disposition.

Waste Type	Disposition	Packaging[a]
Project Site-Specific Waste		
PPE	WERF	Bags
Plastic Sheeting	WERF	Bags
Concrete	Envirocare	Open-Top Roll Containers
Concrete Piping	Envirocare	Open-Top Roll Containers
Pumice/Concrete Blocks	Envirocare	Open-Top Roll Containers
Sludge	WERF	208-L (55-gal) Drum
Gravel	Envirocare	Open-Top Roll Containers
Sludge Incineration Residue	Envirocare	208-L (55-gal) Drum
Other Potential Waste		
Unused/Unaltered Samples	Envirocare	19-L (5-gal) Drum
Analytical Residues	Envirocare	19-L (5-gal) Drum
Clean Sample Containers	CFA Landfill	19-L (5-gal) Drum
Hydraulic Spills	CFA Landfill	19-L (5-gal) to 208-L (55-gal) Drum
Contaminated Equipment/Containers	RWMC/Envirocare	To Be Determined
Miscellaneous	CFA Landfill	Bags

a. The final packaging configuration will be coordinated with WGS personnel.

1.8.5 ARA-07 Waste Streams

Since abandonment in place is the preferred disposition, only construction materials (i.e., wood, asphalt roofing, and fencing), PPE, and plastic sheeting are anticipated as waste streams. However, other components of the seepage pit may be classified as low-level radioactive during the closure activities. Other potential waste streams include hydraulic spills, contaminated equipment, and miscellaneous waste. The anticipated volume and waste classification of the waste generated are summarized in Table J-3.

1.8.6 ARA-07 Disposition

Disposal options for the waste generated during the closure of the ARA-07 seepage pit include the Radioactive Waste Management Complex (RWMC) or the CFA Landfill. PPE and plastic sheeting will be incinerated at WERF. Other potentially-generated waste will be disposed at Envirocare. Table J-4 summarizes the disposition of waste generated during remediation of ARA-07.

Table J-3. ARA-07 Waste Stream Summary.

Waste Type	Anticipated Volume	Waste Classification	Waste Code
	Project Site-Specific Waste		
PPE	0.76 m^3 (1 yd^3)	Low-level Radioactive or Conditional Industrial[a]	—
Plastic Sheeting	0.76 m^3 (1 yd^3)	Low-level Radioactive or Conditional Industrial[a]	—
Pumice/Concrete Blocks	0.76 m^3 (1 yd^3)	Low-level Radioactive or Conditional Industrial[a]	—
Wood Structure w/roofing	2.7 m^3 (3.5 yd^3)	Low-level Radioactive or Conditional Industrial[a]	—
Fencing	0.8 m^3 (1.1 yd^3)	Low-level Radioactive or Conditional Industrial[a]	—
	Other Potential Waste		
Hydraulic Spills	< 0.77 m^3 (1 yd^3)	Conditional Industrial	—
Contaminated Equipment	No estimate	Low-level Radioactive	—
Miscellaneous	< 0.77 m^3 (1 yd^3)	Conditional Industrial	—

a. Based on RadCon survey results.

Table J-4. ARA-07 Waste Stream Disposition.

Waste Type	Disposition	Packaging[a]
	Project Site-Specific Waste	
PPE	WERF	Bags
Plastic Sheeting	WERF	Bags
Pumice/Concrete Blocks	RWMC or Close in-Place	1.2 × 1.2 × 2.4 m (4 × 4 × 8 ft) Wooden Box
Wood Structure w/roofing	RWMC or CFA Landfill	1.2 × 1.2 × 2.4 m (4 × 4 × 8 ft) Wooden Box
Fencing	RWMC or CFA Landfill	1.2 × 1.2 × 2.4 m (4 × 4 × 8 ft) Wooden Box
	Other Potential Waste	
Hydraulic Spills	CFA Landfill	19-L (5-gal) to 208-L (55-gal) Drum
Contaminated Equipment	RWMC	To Be Determined
Miscellaneous	CFA Landfill/RWMC	Bags

a. The final packaging configuration will be coordinated with WGS personnel.

1.8.7 ARA-08 Summary of Remedial Activities

ARA-08 is a concrete block-lined seepage pit covered by three concrete slabs. No evidence was found that the pit had received hazardous waste; hence, the seepage pit will be abandoned in place. Remedial activities are outlined in Section 2.2.4.2 of the Phase 1 Work Plan.

1.8.8 ARA-08 Waste Streams

The overlying concrete slabs comprise the only projected waste stream for the in-plate closure of the ARA-08 seepage pit. However, radiological screening during closure activities could provide data, which would classify other components of the seepage pit as low-level radioactive. All potential waste streams have been identified in Table J-5.

Table J-5. ARA-08 Waste Stream Summary.

Waste Type	Anticipated Volume	Waste Classification	Waste Code
	Project Site-Specific Waste		
PPE	0.76 m^3 (1 yd^3)	Low-level Radioactive or Conditional Industrial[a]	—
Plastic Sheeting	0.76 m^3 (1 yd^3)	Low-level Radioactive or Conditional Industrial[a]	—
Concrete Slabs	2.3 m^3 (3.0 yd^3)	Low-level Radioactive or Conditional Industrial[a]	—
Pumice/Concrete Blocks	0.76 m^3 (1 yd^3)	Low-level Radioactive or Conditional Industrial[a]	—
	Other Potential Waste		
Hydraulic Spills	< 0.77 m^3 (1 yd^3)	Conditional Industrial	—
Contaminated Equipment	No estimate	Low-level Radioactive	—
Miscellaneous	< 0.77 m^3 (1 yd^3)	Conditional Industrial	—

a. Based on RadCon survey results.

1.8.9 ARA-08 Disposition

Final disposition of these waste streams includes incineration at WERF and disposal at the RWMC or the CFA Landfill. Table J-6 summarizes the final disposition and packaging for each waste stream.

1.8.10 ARA-13 Summary of Remedial Activities

ARA-13 is a septic system comprised of a septic tank, a screened distribution box, a manhole, and associated piping. Analytical results indicate that the septic tank and piping contain sludge classified as low-level mixed waste. The distribution box and sludge within the distribution box are thought to contain waste classified as low-level mixed waste that is TSCA regulated due to the presence of PCBs. Remedial activities are outlined in Section 2.2.4.3 of the Phase 1 Work Plan.

Table J-6. ARA-08 Waste Stream Disposition.

Waste Type	Disposition	Packaging[a]
	Project Site-Specific Waste	
PPE	WERF	Bags
Plastic Sheeting	WERF	Bags
Concrete Slabs	RWMC or Close in-Place	1.2 × 1.2 × 2.4 m (4 × 4 × 8 ft) Wooden Box
Pumice/Concrete Blocks	RWMC or CFA Landfill	1.2 × 1.2 × 2.4 m (4 × 4 × 8 ft) Wooden Box
	Other Potential Waste	
Hydraulic Spills	CFA Landfill	19-L (5-gal) to 208-L (55-gal) Drum
Contaminated Equipment	RWMC	To Be Determined
Miscellaneous	CFA Landfill/RWMC	Bags

a. The final packaging configuration will be coordinated with WGS personnel.

1.8.11 ARA-13 Waste Streams

Waste generated during the remediation of the ARA-13 Sanitary Waste System includes sludge (bottom cleaning of the septic tank, distribution box, and possibly the manhole), PPE, and plastic sheeting. Waste streams associated with sampling will also be generated. These wastes include unused/unaltered samples, analytical residues, and sample containers. The anticipated volumes and classifications of the wastes generated are summarized in Table J-7.

1.8.12 ARA-13 Disposition

Final disposition for these waste streams occurs at several facilities. An approved facility such as RWMC on Envirocare will be used for the disposal of PPE and plastic sheeting. Disposal of all TSCA-regulated wastes will occur at an approved off-Site facility such as Environcare. Disposal of low-level radioactive waste will be done at the RWMC. Nonhazardous, nonradioactive wastewater from the septic tank will be disposed at the CFA sewage treatment facility. Conditional industrial waste will be sent to the CFA Landfill. Table J-8 summarizes the final disposition and packaging for each waste stream.

1.8.13 ARA-16 Summary of Remedial Activities

The ARA-729 Radionuclide Tank, located at ARA-16, is a 3,785-L (1,000-gal) stainless steel, underground holding tank resting within a lidless concrete vault. The tank was connected to facilities (Buildings ARA-626 and ARA-627) through a series of stainless steel pipes. The piping intersects contaminated soil and concrete associated with the ARA-626 hot cells located within the ARA-25 CERCLA site. Analytical results and process knowledge indicate that contaminants of concern include radionuclides, metals, and organics (including PCBs). The selected remedy is outlined in Section 2.2.3 of the Phase 1 Work Plan.

Table J-7. ARA-13 Waste Stream Summary.

Waste Type	Anticipated Volume	Waste Classification	Waste Code
	Project Site-Specific Waste		
PPE	0.76 m^3 (1 yd^3)	Low-level	—
Plastic Sheeting	0.76 m^3 (1 yd^3)	Low-level	—
Septic Tank Water	18,927 L (5,000 gal)	N/A	
Septic Tank Sludge	3,785 L (1,000 gal)	Low-level	—
Distribution Box Sludge	0.85 m^3 (1.11 yd^3)	Low-level w/TSCA	—
	Other Potential Waste		
Unused/Unaltered Samples	< 0.03 m^3 (1.0 ft^3)	Low-level w/ TSCA	—
Analytical Residues	< 0.03 m^3 (1.0 ft^3)	Low-level w/TSCA	D002
Clean Sample Containers	< 0.03 m^3 (1.0 ft^3)	Conditional Industrial	—
Hydraulic Spills	< 0.77 m^3 (1 yd^3)	Conditional Industrial	—
Contaminated Equipment	No estimate	Low-level Radioactive	—
Miscellaneous	< 0.77 m^3 (1 yd^3)	Conditional Industrial	—

Table J-8. ARA-13 waste stream disposition.

Waste Type	Disposition	Packaging[a]
	Project Site-Specific Waste	
PPE	Envirocare/RWMC[b]	Bags
Plastic Sheeting	Envirocare/RWMC[b]	Bags
Septic Tank Water	CFA Sewage Treatment Plant	N/A
Septic Tank Sludge	RWMC	208-L (55-gal) Drum
Distribution Box Sludge	Envirocare	208-L (55-gal) Drum
	Other Potential Waste	
Unused/Unaltered Samples	Envirocare/RWMC[b]	19-L (5-gal) Drum
Analytical Residues	Envirocare/RWMC[b]	19-L (5-gal) Drum
Clean Sample Containers	CFA Landfill	19-L (5-gal) Drum
Hydraulic Spills	CFA Landfill	19-L (5-gal) to 208-L (55-gal) Drum
Contaminated Equipment/Containers	Envirocare/RWMC[b]	To Be Determined
Miscellaneous	CFA Landfill	Bags

a. The final packaging configuration will be coordinated with WGS personnel.
b. Waste may be disposed of at either Envirocare or RWMC depending on the final waste designation.

1.8.14 ARA-16 Waste Streams

Wastes generated during the remediation of the ARA-16 Radionuclide Tank include sludge and liquid waste (generated during the cleaning of the tank bottoms), tank rinsate (water generated during decontamination and rinsing), concrete (generated from sizing and removal of the vault), gravel (from within the vault), fencing, stainless steel piping, analytical waste (derived from confirmation sampling and analysis), PPE, and plastic sheeting. The anticipated volumes of wastes generated during the ARA-16 remediation activities are summarized in Table J-9.

Table J-9. ARA-16 Waste Stream Summary.

Waste Type	Anticipated Volume	Waste Classification	Waste Code
Project Site-Specific Waste			
PPE	0.76 m^3 (1 yd^3)	Low-level Mixed	F001, F005
Plastic Sheeting	0.76 m^3 (1 yd^3)	Low-level Mixed	F001, F005
Tank Liquid Waste	2,650 L (700 gal)	Low-level Mixed	F001, F005,
Tank Sludge Waste	378.5 L (100 gal)	Low-level Mixed w/TSCA	F001, F005, D040
Tank Rinsate	378.5 L (100 gal)	Low-level Mixed	F001, F005
Concrete	80 m^3 (104 yd^3)	Low-level Radioactive	—
Stainless Steel Piping	1.0 m^3 (1.3 yd^3)	Low-level Radioactive	F001, F005
Stainless Steel Tank	4.4 m^3 (5.7 yd^3)	Low-level Radioactive	F001, F005
Fencing	3.2 m^3 (4.2 yd^3)	Low-level Radioactive	—
Contaminated Gravel/Soil	25 m^3 (33 yd^3)	Low-level Radioactive	—
Other Potential Waste			
Unused/Unaltered Samples	< 0.03 m^3 (1.0 ft^3)	Low-level Mixed w/ TSCA	F001, F005, D040
Analytical Residues	< 0.03 m^3 (1.0 ft^3)	Low-level Mixed w/TSCA	F001, F005, D002, D040
Clean Sample Containers	< 0.03 m^3 (1.0 ft^3)	Conditional Industrial	—
Hydraulic Spills	< 0.77 m^3 (1 yd^3)	Conditional Industrial	—
Contaminated Equipment	No estimate	Low-level Radioactive	—
Miscellaneous	< 0.77 m^3 (1 yd^3)	Conditional Industrial	—

1.8.15 ARA-16 Disposition

Final dispositions for these waste streams occur at several facilities. Disposal of all TSCA-regulated wastes (sludge, samples, and analytical residues) will occur at an approved off-Site facility such as Allied Technologies Group, Inc. (ATG). Low-level radioactive wastes (fencing, concrete, and gravel) will be disposed at the RWMC. The low-level mixed waste will be disposed at the INEEL CERCLA Disposal Facility (ICDF) with the conditional industrial waste destined for disposal at the CFA Landfill. The piping and tank will be grouted and shipped for disposal at the ICDF. Table J-10 summarizes the final disposition and packaging for each waste stream.

1.8.16 ARA-21 Summary of Remedial Activities

The ARA-21 site includes a septic tank, a chlorine contact tank, a seepage pit, and associate piping. Based upon anecdotal information and limited analytical data, the system has not received any hazardous waste or radiological contamination. The seepage pit will be abandoned in place. The decision to remove the tanks or abandon them in place will be based upon whether any liquid waste remains in the two tanks

and whether this waste poses an unacceptable risk. The proposed activities are outlined in Section 2.2.4.4 of the Phase 1 Work Plan.

Table J-10. ARA-16 waste stream disposition.

Waste Type	Disposition	Packaging[a]
	Project Site-Specific Waste	
PPE	ICDF	Bags
Plastic Sheeting	ICDF	Bags
Tank Liquid Waste	ICDF	High-Integrity Container or Drums
Tank Sludge Waste	ATG	High-Integrity Container
Tank Rinsate	ICDF	High-Integrity Container or Drums
Concrete	RWMC	1.2 × 1.2 × 2.4 m (4 × 4 × 8 ft) Wooden Box
Stainless Steel Piping	ICDF	1.2 × 1.2 × 2.4 m (4 × 4 × 8 ft) Wooden Box
Stainless Steel Tank	ICDF	Intact
Fencing	RWMC or CFA Landfill	1.2 × 1.2 × 2.4 m (4 × 4 × 8 ft) Wooden Box
Contaminated Gravel/Soil	RWMC	Open-Top Roll Containers
	Other Potential Waste	
Unused/Unaltered Samples	ATG	19-L (5-gal) Drum
Analytical Residues	ATG	19-L (5-gal) Drum
Clean Sample Containers	CFA Landfill	19-L (5-gal) Drum
Hydraulic Spills	CFA Landfill	19-L (5-gal) to 208-L (55-gal) Drum
Contaminated Equipment/Containers	RWMC	To Be Determined
Miscellaneous	CFA Landfill	Bags

a. The final packaging configuration will be coordinated with WGS personnel.

1.8.17 ARA-21 Waste Streams

Wastes generated during the removal of the ARA-21 Sanitary Waste System include concrete and concrete piping, PPE, plastic sheeting, and hydraulic spills. The anticipated volume and waste classification for the wastes generated are summarized in Table J-11.

Table J-11. ARA-21 Waste Stream Summary.

Waste Type	Anticipated Volume	Waste Classification	Waste Code
Project Site-Specific Waste			
PPE	0.76 m^3 (1 yd^3)	Conditional Industrial	—
Plastic Sheeting	0.76 m^3 (1 yd^3)	Conditional Industrial	—
Concrete	1.5 m^3 (2.0 yd^3)	Conditional Industrial	—
Concrete Piping	0.28 m^3 (0.36 yd^3)	Conditional Industrial	—
Other Potential Waste			
Hydraulic Spills	< 0.77 m^3 (1 yd^3)	Conditional Industrial	—
Miscellaneous	< 0.77 m^3 (1 yd^3)	Conditional Industrial	—

1.8.18 ARA-21 Disposition

Since the wastes generated at ARA-21 are classified as conditional industrial, disposition of these waste streams is at the CFA Landfill. Table J-12 summarizes the final disposition and packaging for each waste stream.

Table J-12. ARA-21 waste stream disposition.

Waste Type	Disposition	Packaging
Project Site-Specific Waste		
PPE	CFA Landfill	Bags
Plastic Sheeting	CFA Landfill	Bags
Concrete	CFA Landfill	1.2 × 1.2 × 2.4 m (4 × 4 × 8 ft) Wooden Box
Concrete Piping	CFA Landfill	1.2 × 1.2 × 2.4 m (4 × 4 × 8 ft) Wooden Box
Other Potential Waste		
Hydraulic Spills	CFA Landfill	19-L (5-gal) to 208-L (55-gal) Drum
Miscellaneous	CFA Landfill	Bags

1.8.19 ARA-25 Summary of Remedial Activities

The ARA-25 site consists of soils beneath the ARA-626 hot cells and the surrounding hot cell foundation walls. The hot cells were used until the facility was shut down in 1988. During decontamination and dismantlement activities at the ARA-I facility, the radiologically-contaminated concrete floor slabs were cut out of the ARA-626 hot cells leaving contaminated soils and the foundation walls behind. The soils and foundation walls are intersected by the stainless steel piping associated with

the ARA-16 site. Analytical results indicate that the contaminants of concern include Cs-137, Ra-226, arsenic, and lead. The selected remedial action is summarized in Section 2.2.5 of the Phase 1 Work Plan.

1.8.20 ARA-25 Waste Streams

Wastes generated during the remediation of the ARA-25 site include soils removed from the area underlying the former ARA-626 hot cell site, concrete from the hot cell foundation walls, analytical waste, PPE, and plastic sheeting. The anticipated volumes of waste generated during the ARA-25 activities are summarized in Table J-13.

Table J-13. ARA-25 Waste Stream Summary.

Waste Type	Anticipated Volume	Waste Classification	Waste Code
Project Site-Specific Waste			
PPE	0.76 m^3 (1 yd^3)	Low-level Radioactive	—
Plastic Sheeting	0.76 m^3 (1 yd^3)	Low-level Radioactive	—
Concrete	28.0 m^3 (36.7 yd^3)	Low-level Radioactive	—
Soils	24.5 m^3 (32 yd^3)	Low-level Radioactive	—
Other Potential Waste			
Unused/Unaltered Samples	< 0.03 m^3 (1.0 ft^3)	Low-level Radioactive	
Analytical Residues	< 0.03 m^3 (1.0 ft^3)	Low-level Mixed	D002
Clean Sample Containers	< 0.03 m^3 (1.0 ft^3)	Conditional Industrial	
Hydraulic Spills	< 0.77 m^3 (1 yd^3)	Conditional Industrial	
Contaminated Equipment	No estimate	Low-level Radioactive	—
Miscellaneous	< 0.77 m^3 (1 yd^3)	Conditional Industrial	—

1.8.21 ARA-25 Disposition

The final disposition for the ARA-25 waste streams will be at several facilities. Disposal of all low-level radioactive wastes will occur at the RWMC. Low-level mixed wastes will be disposed of at Envirocare. For the conditional industrial waste streams, the CFA Landfill will be the final disposal site. Table J-14 summarizes the final disposition and packaging for each waste stream.

Table J-14. ARA-25 waste stream disposition.

Waste Type	Disposition	Packaging
Project Site-Specific Waste		
PPE	RWMC	Bags
Plastic Sheeting	RWMC	Bags
Concrete	RWMC	1.2 × 1.2 × 2.4 m (4 × 4 × 8 ft) Wooden Box
Soils	RWMC	1.2 × 1.2 × 2.4 m (4 × 4 × 8 ft) Wooden Box
Other Potential Waste		
Unused/Unaltered Samples	RWMC	19-L (5-gal) Drum
Analytical Residues	Envirocare	19-L (5-gal) Drum
Clean Sample Containers	RWMC	19-L (5-gal) Drum
Hydraulic Spills	CFA Landfill	19-L (5-gal) to 208-L (55-gal) Drum
Contaminated Equipment/Containers	RWMC	To Be Determined
Miscellaneous	CFA Landfill	Bags

2. REFERENCES

DOE-ID, 1999, *Idaho National Engineering and Environmental laboratory Reusable Property, Recyclable Materials, and Waste Acceptance Criteria*, Department of Energy Idaho Operations Office, DOE/ID-10481, Revision 10, November.

DOE-ID, 2000, *Final Record of Decision for Power Burst Facility and Auxiliary Reactor Area*, Department of Energy Idaho Operations Office, January 2000.